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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/770,251

02/02/2004

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31571-1001

9448

5179 7590 07/10/2007
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EXAMINER

KWIECINSKI, RYAN D

ART UNIT	PAPER NUMBER
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3635

MAIL DATE	DELIVERY MODE
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07/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 7, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Publication No. US 2003/0079422 A1 to Bracale.

Claim 1:

Bracale discloses a skylight system comprising:
a tapered light tube (2, Fig.1) comprising a top and a bottom;
a dome (4, Fig.1) disposed at said top of said light tube, and
a diffuser (40, Fig.5) disposed at said bottom of said tube,
said tapered light tube wider at said top than at said bottom (Fig.1), said skylight system operable to be installed on a roof without the use of roof flashing material.

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The recitation "said skylight system operable to be installed on a roof without the use of roof flashing material" is considered intended use and does not provide additional structure to the skylight system of claim 1.

Claim 7:

Bracale teaches the skylight system of claim 6 (above) wherein said diffuser comprises complete diffusion (Page 2, paragraph 37, lines 1-2) on its interior.

Claim 16:

Bracale discloses the skylight system of claim 1 (above) wherein said light tube further comprises a reflective interior (Page 1, paragraph 18, line 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0079422 A1 to Bracale in view of USPN 2,858,734 to Boyd.

Claim 3:

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Bracale discloses the skylight system of claim , but does not disclose said dome comprises a diffused dome.

Boyd discloses said dome (23, Fig.1) is a diffused dome (Column 3, lines 5-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have created the top dome of Bracale out of a material with a surface pattern that would cause the dome to completely diffuse light into the tube taught by Boyd, directing the light down the tube. The diffused dome enhances the overall performance of the skylight causing more light to enter the room being illuminated below.

Claim 4:

Bracale in view of Boyd discloses the skylight system of claim 3, Boyd also discloses said dome comprises a completely diffused dome (prisms, 28, cover the whole surface, Fig.1) on its interior.

Claim 5:

Bracale discloses the skylight system of claim 1, but does not disclose wherein said diffused dome comprises a prismatic diffuser.

Boyd disclose said dome comprises a prismatic diffuser (Column 3, lines 5-7)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have created a top dome of the skylight system of Bracale

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including a prismatic diffuser taught by Boyd, which scatters the light into the tube at angles causing the light to continue down the light tube. Using a diffuser is an idea well known in the art of skylights and lights in general.

Claims 8,10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0079422 A1 to Bracale in view of Publication No. US 2003/0066254 A1 to DeBlock.

Claim 8:

Bracale teaches the skylight system of claim 6, but does not teach wherein said bottom diffuser comprises a prismatic diffuser.

DeBlock teaches wherein said bottom diffuser comprises a prismatic diffuser (Page 1, paragraph 16, line 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the bottom diffuser with a prismatic diffuser taught by DeBlock to better enhance the scattering of the light into the room into which the skylight directs the sunlight. Prismatic diffusers are very well known in the art and would have been an obvious application in Bracale's skylight system.

Claim 10:

Bracale and DeBlock teach the skylight system of claim 8, DeBlock also teaches wherein said tapered light tube is sealed to said top dome (Page 1,

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paragraph 18, lines 1-4), but does not teach said light tube is sealed to said bottom diffuser, resulting in a completely sealed skylight system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have sealed the skylight system on both ends where the openings exist in order to keep out bugs, moisture, and/or dust.

Claim 11:

Bracale and DeBlock teach the skylight system of claim 8, but they do not directly teach wherein each of said dome, said tapered tube, and said bottom diffuser are stackable during shipping and storage with other similar components. However, Bracale's dome, tapered tube, and bottom diffuser are clearly capable of being stacked.

Bracale's top dome is a hemispherical dome so it can obviously be stacked. Bracale's system has a tapered tube, so it as well can obviously be stacked. Bracale's bottom diffuser is either flat or hemispherical which can obviously be stacked. The shape of the skylight system is merely a design choice. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have created a design of a skylight which had parts that were able to be stacked during shipping or storage.

Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0079422 A1 to Bracale in view of USPN 5,596,848 to Lynch.

Claims 12, 15:

Bracale teaches the skylight system of claim 1, but he does not teach wherein said top dome comprises a notch system and said tapered light tube is disposed within said notch system per claim 12 or wherein the notch system further comprises a gasket per claim 15.

Lynch teaches wherein said top dome comprises a notch system (30,37, Fig.4) and said tapered light tube is disposed within said notch system per claim 12 or wherein the notch system further comprises a gasket (36, Fig.6) per claim 15.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a notch system on the bottom of the dome, which mates with the top of the tapered tube and creates a more secure connection and seal between the two. It is also obvious to include a gasket in this notch system to seal the opening between the dome and the tube. The use of mating edges, such as a notch and a lip, as well as gasket to seal the mating edges are two extremely well known practices.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0079422 A1 to Bracale in view of USPN 5,896,713 to Chao et al.

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Claim 13,14:

Bracale teaches the skylight system of claim 1, but he does not teach wherein said bottom diffuser comprises a notch system and said tapered light tube is disposed within said notch system per claim 13 or wherein the notch system further comprises a gasket per claim 14.

Chao et al. teaches wherein said bottom diffuser comprises a notch system (26, Fig.5) and said tapered light tube is disposed within said notch system per claim 13 or wherein the notch system further comprises a gasket (94, Fig.5) per claim 14.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a notch system on the top of the bottom diffuser, which mates with the bottom of the tapered tube and creates a more secure connection and seal between the two. It is also obvious to include a gasket in this notch system to seal the opening between the bottom diffuser and the tube. The use of mating edges, such as a notch and a lip, as well as gasket to seal the mating edges are two extremely well known practices.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0079422 A1 to Bracale in view of USPN 6,604,329 B2 to Hoy et al.

Claim 17:

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Bracale teaches the skylight system of claim 1, Bracale does not teach wherein a back of said top of said light tube is higher than a front of said top of said light tube. Hoy et al. teaches wherein a back of said top of said light tube is higher than a front of said top of said light tube (Fig.1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have created a light tube in which the back of the tube is higher than the front of the tube causing the tube to form to the shape of a slant roof. Also a slant tube is known to collect more light at a desired angle to direct the light down the tube. The idea of the shape of the tube is well known and is merely a design choice.

Claims 18, 21, 22,23, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0066254 A1 to DeBlock in view of 2,858,734 to Boyd.

Claim 18:

DeBlock discloses a skylight system comprising:

- a light tube (16, Fig.1) comprising a top and a bottom;
- a dome (20, Fig.3) disposed at and sealed (Page 1, paragraph 18, lines 1-4) at said top of said light tube;
- a diffuser (14, Fig.1) disposed at said bottom of said light tube;

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DeBlock does not disclose a completely diffused dome, a diffuser sealed at said bottom of said light tube, said combination of said light tube, said top dome and said bottom diffuser permanently sealed.

Boyd discloses a completely diffused dome.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have sealed the skylight system on both ends where the openings exist in order to keep out bugs, moisture, and/or dust.

It would have also been obvious to one of ordinary skill in the art at the time the invention was made to have created the top dome of DeBlock out of a material with a surface pattern that would cause the dome to completely diffuse light into the tube taught by Boyd, directing the light down the tube. The diffused dome enhances the overall performance of the skylight causing more light to enter the room being illuminated below.

Claim 21

DeBlock in view of Boyd discloses the skylight system of claim 18, DeBlock does not disclose wherein said diffused dome comprises a prismatic diffuser per claim 21.

Boyd discloses wherein said diffused dome comprises a prismatic diffuser (Column 3, lines 5-7).

Claim 22:

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DeBlock in view of Boyd discloses the skylight system of claim 18, Boyd also discloses wherein said bottom diffuser comprises complete diffusion (prisms, 28, cover the entire surface, Fig.1)

Claim 23:

DeBlock in view of Boyd discloses the skylight system of claim 18, DeBlock also discloses wherein said bottom diffuser comprises a prismatic diffuser (Page 1, paragraph 16, line 5).

Claim 28:

DeBlock in view of Boyd discloses the skylight system of claim 18, DeBlock also discloses wherein said light tube further comprises a reflective interior (Page 2, paragraph 24, lines 1-3).

Claims 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0066254 A1 to DeBlock in view of USPN 2,858,734 to Boyd in view of USPN 5,596,848 to Lynch.

Claim 24,26:

DeBlock in view of Boyd discloses the skylight system of claim 18, but does not disclose wherein said top dome comprises a notch system and said light tube is disposed within said notch system per claim 24 or wherein the notch system further comprises a gasket per claim 26.

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Lynch discloses wherein said top dome comprises a notch system (30,37, Fig.4) and said light tube is disposed within said notch system per claim 24 or wherein the notch system further comprises a gasket (36, Fig.6) per claim 26.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a notch system taught by Lynch on the bottom of the dome of DeBlock, which mates with the top of the tapered tube and creates a more secure connection and seal between the two. It is also obvious to include a gasket in this notch system to seal the opening between the dome and the tube. The use of mating edges, such as a notch and a lip, as well as gasket to seal the mating edges are two extremely well known practices.

Claims 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0066254 A1 to DeBlock in view of USPN 2,858,734 to Boyd in view of USPN 5,896,713 to Chao et al.

Claim 25,27

DeBlock in view of Boyd discloses the skylight system of claim 18, but does not disclose wherein said bottom diffuser comprises a notch system and said light tube is disposed within said notch system per claim 25 or wherein the notch system further comprises a gasket per claim 27.

Chao et al. discloses wherein said top dome comprises a notch system (26, Fig.5) and said light tube is disposed within said notch system per claim 25 or wherein the notch system further comprises a gasket (94, Fig.5) per claim 27.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a notch system taught by Chao et al. on the top of the bottom diffuser of DeBlock, which mates with the bottom of the tapered tube and creates a more secure connection and seal between the two. It is also obvious to include a gasket in this notch system to seal the opening between the bottom diffuser and the tube. The use of mating edges, such as a notch and a lip, as well as gasket to seal the mating edges are two extremely well known practices.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0066254 A1 to DeBlock in view of USPN 2,858,734 to Boyd in view of USPN 6,604,329 B2 to Hoy et al.

Claim 29:

DeBlock in view of Boyd discloses the skylight system of claim 18, but does not teach wherein a back of said top of said light tube is higher than a front of said top of said light tube.

Hoy et al. teaches wherein a back of said top of said light tube is higher than a front of said top of said light tube (Fig.1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have created DeBlock's light tube in which the back of the tube is higher than the front of the tube taught by Hoy et al. causing the tube to form to the shape of a slant roof. Also a slant tube is known to collect more light at a desired angle to direct the light down the tube. The idea of the shape of the tube is well known and is merely a design choice.

Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0079422 A1 to Bracale in view of USPN 2,858,734 to Boyd.

Claim 30:

Bracale discloses the skylight comprising a light tube, a bottom diffuser, and a top dome,

Bracale does not disclose the dome being completely diffused nor does he disclose cutting a hole in the roof and lowering the skylight system through the hole in the roof.

Boyd discloses a completely diffused (prisms, 28, span along the entire surface of 23, Fig.1) dome (23, Fig.1) atop the light tube.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the skylight system of Bracale with a completely diffused dome taught by Boyd. A completely diffused dome will direct

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more sunlight down the tube causing enhanced illumination of the room below the tube.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to install the skylight system in the manner, which is presented in claim 30. It is extremely well known and obvious to known in order to have a skylight, one must cut a hole in the roof, which will accommodate for the light tube. It is also extremely obvious to lower the tube into the hole in order to place the tube through the roof. Further is very obvious to attach the dome and the diffuser to the light tube in order to complete the light tube assembly. This method of assembling the skylight system is notoriously well known.

Claim 31:

Bracale in view of Boyd discloses the method of claim 30 as well as the tapered tube, but does not disclose lowering the tapered tube through a hole until the roof stops the tapered light tube.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to lower the tapered tube through the hole just like in claim 30. It would have also been obvious to create a hole a certain size smaller than the tapered tube in order to create a friction fit when the tube is lowered into the hole.

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Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0079422 A1 to Bracale in view of USPN 2,858,734 to Boyd in view of Publication No. US 2003/0066254 A1 to DeBlock.

Claim 32:

Bracale in view of Boyd discloses the method of claim 30, but does not disclose wherein the step of disposing a diffuser to the light tube comprises permanently sealing the diffuser to the light tube; and wherein the step of disposing a dome atop the light tube comprises permanently sealing the dome atop the light tube; resulting in a permanently sealed skylight system.

DeBlock discloses wherein the step of disposing a dome atop the light tube comprises permanently sealing (Page 1, paragraph 18, lines 1-4) the dome atop the light tube. DeBlock does not disclose wherein the step of disposing a diffuser to the light tube comprises permanently sealing the diffuser to the light tube; resulting in a permanently sealed skylight system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have sealed the skylight system of Bracale on both ends where the openings exist in order to keep out bugs and/or dust taught by DeBlock. In order to have a sealed skylight system, it is extremely obvious that one must take the step to actually seal the skylight system.

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Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0079422 A1 to Bracale in view of USPN 2,858,734 to Boyd in view of USPN 5,596,848 to Lynch.

Claim 33:

Bracale in view of Boyd discloses the method of claim 30, but does not teach wherein the step of disposing the dome atop the light tube comprises providing a dome with a notch system and disposing the light tube with the notch system.

Lynch teaches wherein said top dome comprises a notch system (30,37, Fig.4) and said tapered light tube is disposed within said notch system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a notch system taught by Lynch on the bottom of the dome of Bracale's skylight system, which mated with the top of the tapered tube, creating a more secure connection and seal between the two. It is also obvious to take the step of disposing the tube within the notch system in order to secure the connection. The use of mating edges, such as a notch and a lip, as well as gasket to seal the mating edges are two extremely well known practices.

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Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0079422 A1 to Bracale in view of USPN 2,858,734 to Boyd in view of USPN 5,896,713 to Chao et al.

Claim 34:

Bracale in view of Boyd discloses the method of claim 30, but does not disclose wherein the step of disposing the diffuser at the bottom of the light tube comprises providing a diffuser with a notch system and disposing the light tube within the notch system.

Chao et al. discloses wherein said top dome comprises a notch system (26, Fig. 5) and said tapered light tube is disposed within said notch system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a notch system taught by Chao et al. on the bottom of the dome of Bracale's skylight system, which mated with the top of the tapered tube, creating a more secure connection and seal between the two. It is also obvious to take the step of disposing the tube within the notch system in order to secure the connection. The use of mating edges, such as a notch and a lip, as well as gasket to seal the mating edges are two extremely well known practices.

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Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0079422 A1 to Bracale in view of Publication No. US 2003/0066254 A1 to DeBlock in view of USPN 6,351,923 B1 to Peterson.

Claim 35:

Bracale in view of DeBlock discloses the skylight system of claim 10, but does not disclose said light tube includes a desiccant disposed therein.

Peterson discloses a desiccant (42, Fig.2) disposed therein.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the skylight system of Bracale including a desiccant disposed within the tube of the skylight taught by Peterson.

Desiccants are notoriously well known in the art to be used to reduce the amount of moisture build up in sealed of spaces. The desiccant will prevent condensation from developing inside of the skylight tube due to the change in temperature of the gas inside of the tube.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0066254 A1 to DeBlock in view of 2,858,734 to Boyd in view of USPN 6,351,923 B1 to Peterson.

Claim 36:

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DeBlock in view of Boyd discloses the skylight system of claim 10, but does not disclose said light tube includes a desiccant disposed therein.

Peterson discloses a desiccant (42, Fig.2) disposed therein.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the skylight system of Bracale including a desiccant disposed within the tube of the skylight taught by Peterson.

Desiccants are notoriously well known in the art to be used to reduce the amount of moisture build up in sealed of spaces. The desiccant will prevent condensation from developing inside of the skylight tube due to the change in temperature of the gas inside of the tube.

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2003/0079422 A1 to Bracale in view of USPN 2,858,734 to Boyd in view of US 2004/0000107 A1 to Landis.

Claim 37:

Bracale in view of Boyd discloses the method of claim 30, but does not disclose a step of providing an adhesive to cement said light tube to said roof.

Landis discloses a step of providing an adhesive (Page 1, Paragraph [0006], line 25-28) to cement said light tube to said roof.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have secured Bracale's skylight system to the roof using

adhesives taught by Landis. Adhesives would secure and seal the skylight to the roof structure, preventing external elements from traveling between the roof and the skylight.

Response to Arguments

Applicant's arguments filed 09 March 2007 have been fully considered.

Regarding the tapered tube of claim 1, Bracale does show a tapered tube (2) in Fig. 1. The tube starts as a square on the bottom and tapers into a circle at the top. The sides of the tube at the point of the square are clearly narrower than the diameter of the circle at the top of the tube. Therefore the sides taper from the narrow sides of the square to the wider sides of the circle.

Applicant's argument regarding the completely diffused dome is persuasive therefore the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of US 2,858,734 to Boyd.

The amendment to the specification overcomes the 112 rejections, therefore the rejections have been withdrawn.

The amended drawings have been accepted.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan D. Kwiecinski whose telephone number is

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(571)272-5160. The examiner can normally be reached on Monday - Friday from 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Chilcot can be reached on (571)272-6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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RDK

Robert Canfield
Primary Examiner
